

CLAIMS:

1. A method for registering a pelvis of a subject in a lateral position, comprising:
determining the position of at least a first point of the pelvis and a second point of
5 the pelvis in a first plane parallel to a first cardinal plane of the pelvis;
determining the position of at least a third point of the pelvis and a fourth point of
the pelvis in a second plane parallel to a second cardinal plane of the pelvis, wherein the
second plane is perpendicular to the first plane; and
determining the position of a third cardinal plane of the pelvis, wherein the third
10 cardinal plane is perpendicular to the first cardinal plane and second cardinal plane.
2. A method as claimed in claim 1, wherein a one of the first and second points or a
one of the third and fourth points is common to the first plane and the second plane.
- 15 3. A method as claimed in claim 1 or 2, wherein the first cardinal plane is the pelvic
frontal plane.
4. A method as claimed in any preceding, wherein the second cardinal plane is the
pelvic mid sagittal plane.
- 20 5. A method as claimed in any preceding claim, wherein the third cardinal plane is
the transverse pelvic plane.
6. A method as claimed in any preceding claim, and further comprising determining
25 the position of a fifth point of the pelvis in the first plane.
7. A method as claimed in any preceding claim, further comprising determining the
position of a sixth point of the pelvis in the second plane.
- 30 8. A method as claimed in any preceding claim, wherein the first plane is the first
cardinal plane.

9. A method as claimed in any preceding claim, wherein the second plane is the second cardinal plane.
10. A method as claimed in any preceding claim wherein determining the position of the first, second, third and fourth points includes tracking the position of an instrument bearing a marker detectable by a tracking system.
11. A method as claimed in any preceding claim, and further comprising registering the position of the pelvis with a virtual model of the pelvis or an image of the pelvis.
12. A method as claimed in any preceding claim and further comprising attaching a marker detectable by a tracking system to determine the position of the marker to a specified anatomical feature of the pelvis.
13. A method as claimed in any preceding claim, wherein determining the position of the first, second, third and fourth points includes applying an end of an instrument to respective anatomical features of the pelvis.
14. A method as claimed in claim 13, wherein determining the position of the first, second, third and fourth points includes subcutaneously applying the end of the instrument.
15. A method as claimed in claim 13, wherein determining the position of the first, second, third and fourth points includes percutaneously applying the end of the instrument.
16. A method as claimed in claim 15, and further comprising palpating the skin of the subject to identify the anatomical features before applying the end of the instrument to the skin above the anatomical feature.
17. A method as claimed in any preceding claim, wherein determining the position of the third cardinal plane comprises calculating the position of the third cardinal plane.

18. A method as claimed in any preceding claim, wherein the first point is the spina iliaca anterior superior and the second point is the symphysis pubis.
19. A method as claimed in any preceding claim, wherein the third point is the
5 spinous process of the S1 vertebra and the fourth point is the spinous process of the S2 vertebra.
20. A method as claimed in claim 2, wherein the point common to the first and second planes is the symphysis pubis.
- 10 21. A system for registering the pelvis of a patient in a lateral position, comprising:
an instrument for locating a plurality of anatomical points of, or adjacent, the pelvis and wherein the position of the instrument is detectable by a tracking system;
a tracking system operable to generate an instrument position signal indicative of
15 the position of the instrument; and
a computer system in communication with the tracking system to receive the instrument position signal, and wherein the computer system includes a data processing device in communication with a memory, the memory storing instructions causing the data processing device to:
20 determine the position of a first pelvic plane from a first set of pelvic part positions derived from corresponding instrument positions;
determine the position of a second pelvic plane from a second set of pelvic part positions derived from corresponding instrument positions; and
determine the position of a third pelvic plane, wherein the first, second and third
25 pelvic planes are mutually perpendicular.
22. A system as claimed in claim 21, wherein the instrument bears a marker detectable by the tracking system.
- 30 23. A system as claimed in claim 22, wherein the marker is wirelessly detectable by the tracking system.

25. A system as claimed in claim 21, wherein the instrument position signal comprises data items representative of the position of the instrument.
26. A system as claimed in claim 21, wherein the tracking system and computer
5 system are integrated.
27. A system as claimed in claim 21, wherein the first set of pelvic positions includes at least three pelvic positions in a first plane parallel to the first pelvic plane.
- 10 28. A system as claimed in claim 27, wherein the second set of pelvic positions includes at least two pelvic positions in a second plane parallel to the second pelvic plane.
29. A system as claimed in claim 28, wherein a one of the pelvic positions in the first set of pelvic positions and the second set of pelvic positions is common.
- 15 30. A system as claimed in claim 21, wherein the first set of pelvic part positions are in the first pelvic plane.
31. A system as claimed in claim 21, wherein the second set of pelvic part positions
20 are in the second pelvic plane.
32. A system as claimed in claim 21, wherein the first set of pelvic part positions includes the positions of the spina iliaca anterior superior and the symphysis pubis.
- 25 33. A system as claimed in claim 21, wherein the second set of pelvic part positions includes the positions of the spinous process of the S1 vertebra and the spinous process of the S2 vertebra.
- 30 34. A method for registering a pelvis of a subject in a lateral position, comprising:
calculating the position of a first cardinal plane of the pelvis using the position of at least a first point and a second point located in a first plane parallel to the first cardinal plane;

calculating the position of a second cardinal plane of the pelvis using the position of at least a third point and a fourth point located in a second plane parallel to the second cardinal plane; and

calculating the position of a third cardinal plane of the pelvis, wherein the first,
5 second and third cardinal planes are mutually perpendicular.

35. A method as claimed in claim 34, wherein the first plane is coincidental with the first cardinal plane and/or the second plane is coincidental with the second cardinal plane.

10 36. A method as claimed in claim 34 or 35, wherein the first cardinal plane is the frontal pelvic plane and/or the second plane is the sagittal pelvic plane and/or the third plane is the transverse pelvic plane.

37. A method as claimed in any of claims 34 to 36, wherein calculating the position of
15 the second cardinal plane also uses a one of the first or second points.

38. A method as claimed in claim 37, wherein the first or second point is the symphysis pubis.

20 39. Computer program code executable by a data processing device to provide a method as claimed in any of claims 34 to 38.

40. A computer program product comprising a computer readable medium bearing computer program code as claimed in claim 39.

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41. A method for registering the pelvis of a subject in a lateral position, the method comprising:

detecting the position of an instrument at a first, second, third and fourth position;
determining the position of a first, second, third and fourth anatomical feature of,
30 or adjacent, the pelvis based on the respective detected positions; and
calculating the position of first, second and third mutually orthogonal cardinal planes of the pelvis.

42. A method as claimed in claim 41, wherein the detecting the position of the instrument includes wirelessly tracking the instrument.
43. A method as claimed in claim 41 or 42, wherein three of the first, second, third
5 and fourth anatomical features lie in the same plane.
44. A method as claimed in any of claim 43, wherein calculating the position further comprises using a one of the first, second, third and fourth anatomical features which does not lie in the same plane and the geometric constraint that a two of the cardinal
10 planes are perpendicular.